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REPORT OF FOREST INSECT CONDITIONS IN WISCONSIN IN 1951

Below is a cursory report of conditions as they were reported within the State. Reporting was done on a voluntary basis and some 257 reports were made; many had to be screened. This may not appear to be impressive but considering the heavy work loads carried by the foresters, the results are gratifying. It is expected that the reports will increase in number and accuracy in 1952.

For lack of a better criterion of abundance, the following was used:

absent = no pests found on host trees.

scarce = a few individuals present; no perceptible damage.

moderately abundant = damage general throughout the area of infestation and some form of decadence evident; center of infestation may show severe damage.

very abundant = damage severe throughout area of infestation; some trees may be dead and others in a dying condition or insects may be doing maximum amount of damage of which they are capable of doing.

* Indicates a critical forest pest.

* 1. An upsurge of the pine tussock moth, Olene plagiata (Wlkr.), was discovered in Douglas County about 2 miles east of Gordon. The infestation covered approximately 3000 acres. The damage was severe over 620 acres, moderately severe over 1200 acres and medium to light over the remainder. Damage was to jack pine.

* 2. The introduced pine sawfly, Diprion simile (Hartig), was reported for the first time in Wisconsin although it is believed to have been present earlier and erroneously reported as Abbott's pine sawfly, Neodiprion pinetum. The insect was reported very abundant in the Apple River Timber Harvest Forest and west of Amery and scarce in Osceola in Polk County, scarce in the Spooner Shell Lake and Sarona areas in Washburn County, scarce at Rice Lake, moderately abundant at Barronett and very abundant at Comstock and Turtle Lake in Barron County. Damage was to white pine.

* 3. The red-headed pine sawfly, Neodiprion lecontei (Fitch), was reported moderately abundant in Oconto, Shawano, Langlade, Waupaca, Waushara, Iron and Douglas Counties and very abundant in Fond du Lac and Sheboygan Counties. It was generally absent to scarce over the remainder of the State.

4. The white pine or Abbott's pine sawfly, Neodiprion pinetum (Nort.), was reported abundant in Fond du Lac and Sheboygan Counties. A vigorous young white pine plantation defoliated by this species in Waukesha County in 1949 showed complete recovery in 1951.

5. The red pine sawfly, Neodiprion nanulus (Schedl), was reported scarce in Wood County.

* 6. The larch sawfly, Pristiphora erichsonii (Htg.), has apparently moved in from Minnesota and has been reported moderately abundant in Douglas, Ashland, Bayfield, Sawyer, Price and Taylor Counties and very abundant in Iron and Vilas Counties.

7. The yellow-headed spruce sawfly, Pikonema alaskensis (Rohwer), was reported scarce in Vilas County.

* 8. The jack-pine form of the spruce budworm, Choristoneura fumiferana, remained at an endemic level in the northwest part of the State and in the vicinity of Wisconsin Dells.

* 9. The larch case-bearer, Coleophora laricella, has been reported in all larch areas except Douglas County. Infestations have generally been moderately abundant to very abundant in the upper part of the State.

*10. The Saratoga spittle bug, Aphrophora saratogensis (Fitch), was reported very abundant in Oconto, Marinette and Florence Counties and small areas in Vilas County.

11. The pine spittle bug, Aphrophora parallela (Say), was reported very abundant in the central part of the State, especially in Portage and Waushara Counties.

12. There has been a very noticeable decline in the population of the white pine weevil, Pissodes strobi (Peck), throughout the State. This reduction can be attributed to the wet season. In spite of the adverse weather, infestations in Marinette County were reported to be moderately heavy.

13. The root collar weevil, Hylobius radicis (Buchanan), was reported very abundant on Scotch pine in Oneida, Portage, Wood, Adams and Jackson Counties.

14. A bark beetle, Pityogenes hopkinsi, has been reported damaging healthy white pine where there had been improper slash disposal.

15. The eastern larch beetle, Dendroctonus simplex (Leconte), was reported to have built up locally on decadent larch in the vicinity of Waupaca and subsequently attacked healthy trees.

16. The red turpentine beetle, Dendroctonus valens, continues on an endemic level in Vilas, Iron and Douglas Counties.

17. The hickory bark beetle, Scolytus quadrispinosus, has been reported to be very abundant in Brown County. It is expected that the wet season will greatly retard the activities of this insect.

18. The Zimmerman pine moth, Dioryctria zimmermani (Grote), is at an endemic level throughout the State except in Pepin, Buffalo and Trempealeau Counties where the planting of pine as windbreaks on exposed sites favors the rise of this pest; it is very abundant in these areas. It has erroneously been reported as the European pine shoot moth, Rhyacionia buoliana (Schiff.).

19. A tip moth tentatively identified as Eucosma sonomana has been reported throughout the jack pine range. It is generally scarce but in a few instances it was found to be very abundant locally.

20. The pitch twig moth, Petrova albicapitana (Heinrich), is abundant throughout the jack pine range.

*21. Larvae of the May beetles, genus Phyllophaga, have been very abundant in Juneau and Iron Counties and have caused severe damage to young plantations in these counties.

22. The continued wet weather reduced the walkingstick, Diapheromera femorata, considerably throughout the State.

23. The pine tortoise scale, Toumayella numismaticum, has been very abundant in Juneau County and damage to jack pine has been severe.

24. The red pine midge, genus Thecodiplosis, has been very abundant in Adams, Wood and Jackson Counties and scarce to moderately abundant throughout the rest of the range of the red pine.

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Direct Control Projects

Direct control measures were used against the pine tussock moth, Olene plagiata, in Douglas County. Approximately 3000 acres were sprayed using a solution of DDT in oil at a strength of 1 pound of DDT per gallon of solution applied at the rate of 1 gallon to the acre.

The insecticide was formulated by the State and applied by the Air Agriculturists, Inc., of Hales Corners, Wisconsin. Two planes were used in the operation; the landing strip was within 1/2 mile of the infestation. The infested land was gently undulating and well blocked by roads which facilitated the marking of the area. The boundaries and flight lines were marked with yellow and orange 30 inch, heavy duty, helium filled balloons sent aloft and retracted with the aid of casting rods and reels. The insecticide was applied approximately 50 feet above the tree tops. Spraying was done on July 9th and 10th. Although most of the land infested was owned by the Mosinee Paper Co., eight land owners were involved in the operation. This pointed to a need for complete block ownership.

The area of infestation was composed largely of mature jack pine. Past history has shown that epidemics have occurred every 10 to 12 years. The current infestation was estimated to be in the 5th or 6th year. The infestation had spread from 620 acres in 1950 to approximately 3000 acres in 1951. Parasitism in the heart of the infestation (620) acres) was 14.6% while parasitism in the moderately heavy area was 2.3%. Larvae of the parasites were mature or had pupated by the time spraying commenced. There were unusually large numbers of eggs of a predaceous stink bug present. A Meteorus appeared to be the most important parasite but further examinations revealed it was heavily parasitized. Other parasites isolated were Habrocytus thyridopterigis (Howard), a chalcid of the family Pteromalidae and Apanteles fiskei (Vier.) of the family Braconidae.

Because the larvae were almost mature when reported, it was recognized that a high percentage of kill as might be desired could not be expected; but in view of the values at stake, the rapid rate of spread (from 600 to 3000 acres in one year), the stage of development of the parasites and predators (immune to spray at this stage), the ideal flying terrain, the availability of labor and materials, etc., an attempt at control was entirely justifiable. The object was to reduce the numbers of the host insect without reducing the numbers of the parasites. This would, in effect, move the infestation from the 5th to the 12th or climax year (at which time the parasites have risen to such numbers as to reduce the host insect to an endemic level) without the additional loss in timber. The results cannot be ascertained at this time but no overwintering larvae could be found in a large part of the area inspected the latter part of January, 1952.

The largest epidemic of the pine tussock moth ever recorded in the county completely wiped out approximately a township of mature jack pine; it is said the larvae were so numerous they stopped railroad transportation.

Direct control was also used against the Saratoga spittle bug during the latter part of July in Oconto, Marinette and Florence Counties. Some 2600 acres were sprayed from the air using DDT at the rate of 1 pound to the acre. Timing was good and the results were excellent.

Numerous small plantations were sprayed with knapsack sprayers and a small portable mist blower (Potts-Spencer Type). Arsenate of lead was used in some cases and DDT in others. Spraying was done to control the red-headed pine sawfly. Results were excellent with either spray.

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